REMARKS

Reconsideration and allowance of the above identified application are requested.

Petition for Extension in Time for Reply

Applicant petitions the Commissioner for Patents to extend the three month time for reply to the Office action mailed November 18, 2004, for one additional month to March 18, 2004. A check that includes the fee for the requested extension is enclosed.

Information Disclosure Statement

The attached IDS includes documents cited in this response to the Office action dated November 18, 2004. A check that includes the fee for submitting the IDS after the first Office action is enclosed.

Specification.

The paragraph that starts on page 2, line 40 is amended to clarify the claimed invention within the scope of the original application. The Applicant's invention claims an emulsified liquid shortening composition comprising dietary fiber gel. The dietary fiber gel of the invention is disclosed by Inglett (U.S. Patent, Number 5,766,622, dated June 16, 1998), which was incorporated by reference into the original as-filed application at page 2, line 42. Information included by reference is "as much a part of the application as filed . . . , and should be treated as part of the text of the application as filed." MPEP § 2163.07(h). Clearly, dietary fiber gel as disclosed by Inglett is part of the as-filed application.

Inglett teaches at Col. 1, lines 9-12, that it is well known that "[d]ietary fibers are generally considered to be the soluble and insoluble components of cell walls . . . [and] consist primarily of cellulose, hemicellulose," and so forth. In the process of the invention, Inglett at Col. 3, lines 24-32, explicitly teaches that "[f]ollowing at least the second stage of treatment . . . the solids are separated for the liquids and the recovered insolubles are carried forward to the next processing step, [wherein] the second stage separation is intended to isolate and recover the gel product of this invention," i.e., dietary fiber gel. The source of the dietary fiber is agricultural by-products such as grain seed brans, hulls, and so forth is noted by Inglett at Col. 3, lines 3-8.

Inglett implicitly teaches that dietary fiber gel is insoluble dietary fiber derived from the alkaline treatment of agricultural by-products. Inglett at Col. 3, line 33 to Col. 4, line 36 teaches the first stage of treatment is "preferably in the range of about . . . pH 9-13. The gel products . . . contained in the insoluble fraction . . . from the first stage . . . are subjected to [a] second stage . . . [of] treatment . . . at alkali pHs, preferably in the range of 7-12. Following the second stage . . . solids are again separated from the liquids . . . [and] the recovered solids consist of cellular debris in the form of a hydrated gel. The gel may be dried." One skilled in the art would know that solids separated from liquid after the second stage are implicitly insoluble dietary fiber. Clearly, because Inglett explicitly and implicitly teaches dietary fiber gel as the insoluble component of dietary fiber that can be recovered and formed into a gel, so does the as-filed application.

As to the physical form and characteristics of the dietary fiber gel, Inglett at Col. 5, lines 43-45, explicitly teaches that dietary fiber gel "may exist in either the hydrated form as gels or in the dehydrated form as flakes or powder." At Col. 4, lines 30-32, the hydrated gel is described as "white or very light in color, [and] has little or no flavor, [and] a smooth texture."

Inglett inherently teaches an amorphous dietary fiber gel because the gel exhibits a smooth morphology. For example, at Col. 4, line 63 to Col. 5, line 3, Inglett teaches that dietary fiber gel has "a smooth sheet- or film-like morphology" based on scanning electron photographs at magnifications of 500-1000X, and "[t]he smoothness of the original gels are restored after reconstitution of the dried products." Typically, crystal structures are characterized by sharp edges that result in rough, jagged, and under scanning electron microscopic magnification a generally non-smooth morphology such that one skilled in the art would know that dietary fiber gel that has a smooth morphology would be inherently amorphous.

Thus, dietary fiber gel in the Applicant's invention comprises non-particulate amorphous insoluble dietary fiber derived from the alkaline treatment of agricultural by-products. Although the specification has been amended so as to more reasonably convey the invention, and more specifically what dietary fiber gel is to one skilled in the art, the amendments to the specification are expressly, implicitly, or inherently supported by the Inglett patent, a part of the original as-filed application.

35 U.S.C. § 102 Claim Rejection (Claims 1, 35, and 36).

The Applicants traverse the rejection of Claims 1, 35, and 36 as anticipated under 35 U.S.C. § 102 (b) because the Young et al reference cited in the Examiner's Office Action teaches fat substitutes comprising two components, a gelatinous aqueous phase and a lipid phase. The gelatinous aqueous phase is a gelatin formed from water and konjac, a soluble fiber. The Applicant's invention on the other hand discloses an emulsified liquid shortening comprising insoluble dietary fiber in the form of a gel, water and a lipid.

There is nothing disclosed in Young et al that anticipates the Applicants' invention as suggested by the Examiner. Anticipation depends upon prior publication of the invention. *35 U.S.C. § 102(b)*. The establishment of anticipation requires that every element and limitation of the claimed invention can be found in a single prior publication. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). The Applicants traverse the rejection because nothing in Young et al teaches all the elements and limitations of the Applicants' claimed invention.

Young et al teach shortening substitutes that comprises two components, an aqueous phase and a lipid phase. The aqueous phase is a gelatin formed from water and konjac. Konjac is derived from the tubers of a plant known as elephant yam, and is a polymer of glucose and mannose, i.e. a polysaccharide. Because polysaccharides are generally known to be water soluble, Young et al implicitly teaches konjac is a soluble fiber. Separately, Stone (U.S. Patent No. 6,391,864) explicitly teaches that konjac is a soluble dietary fiber. Thus, Young et al teach shortening substitutes that comprise an aqueous phase and a lipid phase, wherein the aqueous phase comprises water and a soluble dietary fiber that form a gelatin. The applicant's invention on the other hand teaches an emulsified liquid shortening that comprises insoluble dietary fiber gel, water, and lipid. Nothing in the cited prior art reference teaches the claimed invention, emulsified liquid shortening comprising insoluble dietary fiber gel, water, and lipid.

For example, Young et al at Col. 3, lines 7-12, teach "a shortening substitute . . . that has an aqueous phase containing water and konjac . . . and a lipid phase." In light of Stone, which teaches at Col. 2., line 28 that "[k]onjac . . . is a soluble dietary fiber," clearly Young et al teach shortening substitutes that comprise soluble dietary fiber and not insoluble dietary fiber.

Further, fiber is a chemically complex and chemically diverse substance that is available from a variety of natural plant sources such as wood pulp, tubers from specific plants such as

elephant yam, and agricultural by-products such as seed brans, hulls, and so forth. Raw fiber is typically a solid that can be processed to produce a wide variety of products. One skilled in the art would know fiber products depend on the fiber source and the processing. While Young et al teach fiber produced by grinding and washing elephant yam plant tubers, the dietary fiber gel disclosed in the Applicant's application comes from the alkaline treatment of agricultural by-products.

For example, Young et al at Col. 4, lines 32-41, teaches konjac, a soluble fiber, "is naturally derived material . . . obtained from the tuber of the plant *Amorphophallus konjac* (elephant yam). The . . . tubers are ground . . . [and] recovered as konjac powder or flour . . . [that] has typically been washed, e.g., with water and/or alcohol." Clearly, Young et al teach shortening substitutes comprising fiber derived from the grinding and washing elephant yam tubers, and not insoluble dietary fiber derived from the alkaline treatment of agricultural by-products.

Finally, the Examiner points out the Young et al teach a lipid phase "that may be any fat or oil" which arguably includes the oil and fats of the lipid of the Applicant's invention. Although the lipid taught by Young et al is arguably similar to the lipid taught by the Applicant, Young et al does not anticipate the Applicant's invention because Young et al combine the lipid with a gelatinous aqueous phase containing soluble fiber while the Applicant's invention combines the lipid with an insoluble dietary fiber.

35 U.S.C. § 103 Claim Rejection (Claims 1-4, and 27-36).

The Applicant traverses the rejection of Claims 1-4, and 27-36 as obvious under 35 U.S.C. § 103 (a) because Young et al , as cited in the Examiner's Office Action, teach shortening substitutes that comprise two components, an aqueous phase and a lipid phase, wherein the aqueous phase is a gelatin formed from water and a soluble fiber, konjac. The Applicant's invention on the other hand discloses an emulsified shortening comprising insoluble dietary fiber gel, water and lipid.

The References Do Not Teach the Claimed Invention

There is nothing disclosed in Young et al that teaches the modification of the references suggested by the Examiner. Obviousness depends on the differences between a claimed

invention and the prior art. *35 U.S.C. § 103(a)*. The establishment of obviousness requires that the prior art must teach or suggest all the limitations of the claimed invention. *In re Royka*, 490 F.2d 981, 984-85 (CCPA 1974). The Applicant traverses the rejection because nothing in Young et al teaches all the elements and limitations of the Applicant's claimed invention.

Young et al teach shortening substitutes that comprises two components, an aqueous phase and a lipid phase. The aqueous phase is a gelatin formed from water and konjac. Konjac is derived from the tubers of a plant known as elephant yam, and is a polymer of glucose and mannose, i.e. a polysaccharide. Because polysaccharides are generally known to be water soluble, Young et al implicitly teaches konjac is a soluble fiber. Separately, Stone (U.S. Patent No. 6,391,864) explicitly teaches that konjac is a soluble dietary fiber. Thus, the Young et al teach shortening substitutes that comprise an aqueous phase and a lipid phase, wherein the aqueous phase comprises water and a soluble dietary fiber that form a gelatin. The applicant's invention on the other hand teaches an emulsified liquid shortening that comprises insoluble dietary fiber, water, and lipid. Nothing in the cited prior art reference teaches the claimed invention, emulsified liquid shortening comprising insoluble dietary fiber gel, water, and lipid.

For example and as noted by the Examiner, Young et al at Col. 3, lines 7-12, teach "a shortening substitute . . . that has an aqueous phase containing water and konjac . . . and a lipid phase." In light of Stone, which teaches at Col. 2., line 28 that "[k]onjac . . . is a soluble dietary fiber," clearly the combined references teach shortening substitutes that comprise soluble dietary fiber and not insoluble dietary fiber.

Further, fiber is a chemically complex and chemically diverse substance that is available from a variety of natural plant sources such as wood pulp, tubers from specific plants such as elephant yam, and agricultural by-products such as seed brans, hulls, and so forth. Raw fiber is typically a solid that can be processed to produce a wide variety of products. One skilled in the art would know fiber products depend on the fiber source and the processing. While Young et al teach fiber produced by grinding and washing elephant yam plant tubers, the dietary fiber gel disclosed in the Applicant's application comes from the alkaline treatment of agricultural by-products.

For example, Young et al at Col. 4, lines 32-41, teaches konjac, a soluble fiber, "is naturally derived material . . . obtained from the tuber of the plant *Amorphophallus konjac* (elephant yam). The . . . tubers are ground . . . [and] recovered as konjac powder or flour . . .

[that] has typically been washed, e.g., with water and/or alcohol." Clearly, Young et al teach shortening substitutes comprising fiber derived from the grinding and washing elephant yam tubers, and not insoluble dietary fiber derived from the alkaline treatment of agricultural by-products.

The Examiner also points out the Young et al teach a lipid phase "that may be any fat or oil" which arguably includes the oil and fats of the lipid of the Applicant's invention. Although the lipid taught by Young et al is arguably similar to the lipid taught by the Applicant, Young et al does not anticipate the Applicant's invention because Young et al combine the lipid with a gelatinous aqueous phase containing soluble fiber while the Applicant's invention combines the lipid with an insoluble dietary fiber.

The Reference Lacks Any Suggestion for Modification

There is nothing disclosed in Young et al that teaches the modification of the references suggested by the Examiner. Obviousness requires that the suggestion to make the claimed invention must found in the prior art. *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991). Such a suggestion is lacking in the cited reference. Even if the references fully taught the Applicant's invention, the Applicant traverses the rejection because nothing in Young et al affirmatively suggests making the cited combination.

Young et al teach teaches shortening substitutes comprising an aqueous phase and a lipid phase, wherein the aqueous phase is a gelatin formed from water and a soluble fiber, konjac. The Applicant's invention on the other hand teaches a shortening substitute comprising dietary fiber gel, water, and lipid. The dietary fiber gel includes insoluble dietary fiber that is dispersed in water, but does not dissolve in water to form an aqueous phase. Nothing in Young et al teaches or suggests shortening substitutes comprising insoluble fiber that forms dispersions.

For example at Col. 3, line 65 to Col. 4, line 3, Young et al teach that "shortening substitutive . . . have an aqueous phase containing konjac . . . , and a lipid phase." At Col. 4, lines 25-26, Young et al specifically point out that "the presence of konjac as a gelling agent in the aqueous phase of the emulsion." When discussing water-in-oil emulsions Young et al at Col. 9, lines 23-27, point out that "the aqueous phase is dispersed throughout the continuous oil phase, preferably as small gelled droplets . . . i.e., the konjac-containing aqueous phase." Further, Stone at Col. 2, lines 27-31, points out that "[k]onjac flour is a soluble dietary fiber that .

. . is typically used as a . . . gelling agent." Clearly, Young et al and Stone teach a water soluble fiber that dissolved in to form gelatin type aqueous phase, and do not teach or suggest the dispersion of an insoluble dietary fiber to form a gel.

The Reference Lacks Any Reasonable Expectation of Success

There is nothing disclosed in Young et al that teaches a reasonable expectation of success in combining the references as suggested by the Examiner. Obviousness exists when the references provide a reasonable expectation of success for the proposed combination. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097-98 (Fed. Cir. 1986). Whether the combination is obvious or unobvious requires consideration of all the evidence and resultant findings. *In re Rinehart*, 531 F.2d 1048, 1052 (CCPA 1976). Such an expectation of success is lacking in the cited reference. Even if the references fully taught the Applicants invention, the Applicant traverses the rejection because nothing in Young et al leads to an expectation of success for the identified combination.

Young et al teaches a very specific soluble fiber compound derived from the grinding and washing of the tuber from a specific plant, *Amorphophallus konjac*, while the dietary fiber disclosed in the Applicant's application comes from the alkaline treatment of agricultural by-products. Fiber, which is naturally produced by plants, is a chemically complex and chemically diverse substance that is available from a variety of sources such as wood pulp, plant tubers, and agricultural by-products such as seed brans, hulls, and so forth. Raw fiber is typically a solid that can be processed to produce a wide variety of products. One skilled in the art would know that fiber products, such as dietary fiber gels, depend on the fiber source and the processing.

The Applicant's invention claims an emulsified liquid shortening, a shortening substitute, comprising dietary fiber gel derived from agricultural by-products grains such as seed brans, hulls, and so forth. The specification, as amended, discloses that the dietary fiber gel in the Applicant's invention comprises insoluble dietary fiber derived from the alkaline treatment of agricultural by-products. Nothing in the cited references teach any expectation that an insoluble fiber derived from the alkaline processing of agricultural by-products can be used in a shortening substitute formulation based on the very specific soluble fiber derived from the tuber of a specific plant known as *Amorphophallus konjac*.

For example, Young et al at Col. 4, lines 32-41, teaches konjac, a soluble fiber, "is naturally derived material . . . obtained from the tuber of the plant *Amorphophallus konjac* (elephant yam). The . . . tubers are ground . . . [and] recovered as konjac powder or flour . . . [that] has typically been washed, e.g., with water and/or alcohol." Clearly, Young et al does not teach any expectation that dietary fiber gel derived from the alkaline treatment of agricultural by-products that substantially disrupts cellular structure can be successfully used in a formulation of a shortening substitute that comprises a gelled aqueous phase having a gelling agent that is a soluble fiber derived for the tuber of a very specific plant, *Amorphophallus konjac*.

Further, the Examiner argues that there is no unobvious or unexpected result for a method of producing an emulsified liquid shortening from dietary fiber gel, water, and lipid that utilizes "micro-particulation" which arguably includes homogenization. Although emulsification of other aqueous gelatinous phases that contain soluble fibers besides konjac, such as xanthan gum, sodium alignate, carrageenan, guar gum, and so forth including fiber modifications that function as soluble fiber, and a lipid phase may be obvious in light of Young et al, nothing in Young et al teaches that emulsification of insoluble dietary fiber, water, and lipid by micro-particulation is an obvious and expected result. Further, at Col. 4, lines 5-6, Young et al teach the use of soluble fiber as a gelling agent to formation of a gelatinous aqueous phase, and does not teach the dispersion of insoluble dietary fiber. Clearly, Young et al does not teach or provide any expectation that gels that are dispersions of insoluble dietary fiber can be emulsified with water and lipid as provided in Claim 27 of the Applicant's application.

35 U.S.C. § 102 Claim Rejection (Claims 1-4).

The Applicants traverse the rejection of Claims 1-4 as anticipated under 35 U.S.C. § 102 (b) because the Cox et al reference cited in the Examiner's Office Action teaches fat substitutes comprising cross-linked plasma, lipid, and gum that is arguably fiber. The Applicant's invention on the other hand discloses an emulsified liquid shortening, a fat substitute, comprising emulsified, but not chemically cross-linked, dietary fiber gel, water and a lipid.

There is nothing disclosed in Cox et al that anticipates the Applicants' invention as suggested by the Examiner. Anticipation depends upon prior publication of the invention. *35 U.S.C. § 102(b)*. The establishment of anticipation requires that every element and limitation of the claimed invention can be found in a single prior publication. *Verdegaal Bros. v. Union Oil*

Co. of California, 814 F.2d 628, 631 (Fed. Cir. 1987). The Applicants traverse the rejection because nothing in Cox et al teaches all the elements and limitations of the Applicants' claimed invention.

Cox et al teach fat substitutes that comprises chemically cross-linked enzymatically-denatured blood plasma, lipids, and binder such as settable vegetable gum. The applicant's invention on the other hand teaches an emulsified liquid shortening, a fat substitute, that is a physical mixture that comprises dietary fiber gel, water, and lipid. Nothing in the cited prior art reference teaches the claimed invention, emulsified liquid shortening comprising dietary fiber gel, water, and lipid.

For example, Cox et al at Col. 4, lines 11-19, teach a fat substitute that includes "plasma" that is "cross-linked with vegetable gums and decholesterolixed, low cholesterol, and cholesterol free oil and fats." At Col. 4, lines 43-47, Cox et al also explain that plasma or "blood protein/vegetable gum (saccharride) fraction[, which is arguably a form of fiber,] . . . can be formulated as [cross-linked] gels." More specifically, at Col. 6, lines 32-41, Cox et al explain that an emulsification processing step can be used so that the lipid, "the fat or oil constituent, . . . is emulsified with the plasma" before chemical cross-linking. "After homogenization, the plasma-based mixture is treated in a manner which will cause the mixture to form a gel," i.e. cross-link. In addition to cross-linking plasma and lipid, Cox et al at Col. 6, lines 42-49, teach that the fat substitute can incorporated a cross-linkable "binder; e.g., a settable vegetable gum such as sodium alignate," which is arguably fiber. "Alignate, like plasma, will cross-link and gel." Further, Cox et al imply cross-linking between the fat substitute components, for example gum and plasma, because at Col. 6, line 62-68, they teach "when a polyvalent, cross-linkable gum, . . . such as sodium alginate, . . . is combined with a co-cross-linkable protein, . . . such as plasma, products which have many new and useful properties can be formed." Although the Examiner points out similarities between that the gum and fat or oil taught by Cox et al and the fiber and lipid of the Applicant's invention, the distinguishing characteristic of the gum, and fat or oil taught by Cox et al is the cross-linking nature of these compounds. Clearly, Cox et al teach fat substitutes that comprise chemically cross-linked compounds that form essentially a single compound and not an emulsified physical combination of dietary fiber gel, water, and lipid.

35 U.S.C. § 103 Claim Rejection (Claims 1-4, 35, and 36).

The Applicant traverses the rejection of Claims 1-4, 35, and 36 as obvious under 35 U.S.C. § 103 (a) because Cox et al , as cited in the Examiner's Office Action, teach fat substitutes that comprise chemically cross-linked plasma, fiber, and lipid. The Applicant's invention on the other hand discloses emulsified liquid shortening, a fat substitute, comprising a physical mixture of dietary fiber gel, water, and lipid.

The References Do Not Teach the Claimed Invention

There is nothing disclosed in Cox et al that teaches the modification of the references suggested by the Examiner. Obviousness depends on the differences between a claimed invention and the prior art. *35 U.S.C. § 103(a)*. The establishment of obviousness requires that the prior art must teach or suggest all the limitations of the claimed invention. *In re Royka,* 490 F.2d 981, 984-85 (CCPA 1974). The Applicant traverses the rejection because nothing in Cox et al teaches all the elements and limitations of the Applicant's claimed invention.

Cox et al teach fat substitutes that comprises chemically cross-linked enzymatically denatured blood plasma, lipids, and binder such as settable vegetable gum. The applicant's invention on the other hand teaches an emulsified liquid shortening, a fat substitute, that is a physical mixture that comprises dietary fiber gel, water, and lipid. Nothing in the cited prior art reference teaches the claimed invention, emulsified liquid shortening comprising dietary fiber gel, water, and lipid.

For example, Cox et al at Col. 4, lines 11-19, teach a fat substitute that includes "plasma" that is "cross-linked with vegetable gums and decholesterolixed, low cholesterol, and cholesterol free oil and fats." At Col. 4, lines 43-47, Cox et al also explain that plasma or "blood protein/vegetable gum (saccharride) fraction[, which is arguably a form of fiber,] . . . can be formulated as [cross-linked] gels." More specifically, at Col. 6, lines 32-41, Cox et al explain that an emulsification processing step can be used so that the lipid, "the fat or oil constituent, . . . is emulsified with the plasma" before chemical cross-linking. "After homogenization, the plasma-based mixture is treated in a manner which will cause the mixture to form a gel," i.e. cross-link. In addition to cross-linking plasma and lipid, Cox et al at Col. 6, lines 42-49, teach that the fat substitute can incorporated a cross-linkable "binder; e.g., a settable vegetable gum such as sodium alignate," which is arguably fiber. "Alignate, like plasma, will cross-link and

gel." Further, Cox et al imply cross-linking between the fat substitute components, for example gum and plasma, because at Col. 6, line 62-68, they teach "when a polyvalent, cross-linkable gum, . . . such as sodium alginate, . . . is combined with a co-cross-linkable protein, . . . such as plasma, products which have many new and useful properties can be formed." Although the Examiner points out similarities between that the gum and fat or oil taught by Cox et al and the fiber and lipid of the Applicant's invention, the distinguishing characteristic of the gum, and fat or oil taught by Cox et al is the cross-linking nature of these compounds. Clearly, Cox et al teach fat substitutes that comprise chemically cross-linked compounds that form essentially a single compound and not an emulsified physical combination of dietary fiber gel, water, and lipid.

The Reference Lacks Any Suggestion for Modification

There is nothing disclosed in Cox et al that teaches the modification of the references suggested by the Examiner. Obviousness requires that the suggestion to make the claimed invention must found in the prior art. *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991). Such a suggestion is lacking in the cited reference. Even if the references fully taught the Applicant's invention, the Applicant traverses the rejection because nothing in Cox et al affirmatively suggests making the cited combination.

Cox et al teach fat substitutes that comprises chemically cross-linked enzymatically-denatured blood plasma, lipids, and binder such as settable vegetable gum. The applicant's invention on the other hand teaches an emulsified liquid shortening, a fat substitute, that is a physical mixture that comprises dietary fiber gel, water, and lipid. Although Cox et al teach emulsification to thoroughly mix the fat substitute components before cross-linking, nothing in the cited prior art reference teaches the claimed invention, emulsified liquid shortening comprising a physically emulsified mixture of dietary fiber gel, water, and lipid.

For example, Cox et al at Col. 6, lines 32-41, explain that an emulsification processing step is used so that the lipid, "the fat or oil constituent, . . . is emulsified with the plasma" before chemical cross-linking. "After homogenization, the plasma-based mixture is treated in a manner which will cause the mixture to form a gel," i.e. cross-link. In Example 1 at lines 38-43, Cox et al teach that the ingredients for a cross-linked plasma and oil fat substitute "are mixed together in a high speed blender, and then heated," pH adjusted, "and then allowed to set," i.e., cross-link.

In Example 2 at Col. 10, lines 68 to Col. 11, line 16, Cox et al teach that the ingredients for a cross-linked plasma, oil, and gum fat substitute are added together "and emulsified by blending in a high speed blender." The mixture is then extruded into strings and the mixture in the form of strings is "set," i.e. cross-linked such that a "complex cross-linked gel" is formed. Clearly, Cox et al teach the thorough mixing or emulsification of reacting ingredients before chemical cross-linking. Nothing in Cox et al teaches or suggests fat substitutes that are emulsified physical mixtures of dietary fiber gel, water, and lipid.

Although the Examiner points out similarities between that the gum and fat or oil taught by Cox et al and the fiber and lipid of the Applicant's invention, the distinguishing characteristic of the gum, and fat or oil taught by Cox et al is the cross-linking nature of these compounds. Clearly, Cox et al teach fat substitutes that comprise chemically cross-linked compounds that form essentially a single compound and not an emulsified physical combination of dietary fiber gel, water, and lipid. Again, nothing in Cox et al teaches or suggests fat substitutes that are emulsified physical mixtures of dietary fiber gel, water, and lipid.

Finally, the Applicant's invention includes methods directed to making fat substitutes through the physical emulsification of dietary fiber gel, water, and lipid, and optionally other ingredients such as soluble fiber. In this regard, Claim 35 is directed to fat substitutes made from methods that include only physical mixing or emulsification of dietary fiber gel, water, and lipid, while Claim 36 includes an additional ingredient, soluble fiber, in the fat substitutes. In either case, the Applicant's invention claims fat substitutes that are physical mixtures of ingredients, and not chemically cross-linked ingredients as taught and suggested by Cox et al.

The Reference Lacks Any Reasonable Expectation of Success

There is nothing disclosed in Cox et al that teaches a reasonable expectation of success in combining the references as suggested by the Examiner. Obviousness exists when the references provide a reasonable expectation of success for the proposed combination. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097-98 (Fed. Cir. 1986). Whether the combination is obvious or unobvious requires consideration of all the evidence and resultant findings. *In re Rinehart*, 531 F.2d 1048, 1052 (CCPA 1976). Such an expectation of success is lacking in the cited reference. Even if the reference fully taught the Applicants invention, the Applicant traverses the rejection because nothing in Cox et al leads to an expectation of success for the identified combination.

Cox et al teach that the ingredient such as plasma, oil, and gum of a fat substitute are cross-linked. The Applicant's fat substitutes are physical mixtures of dietary fiber gel, water, and lipid that are not cross-linked. Further, one skilled in the art would know that water is not expected to cross-link with other organic compounds. Nothing in Cox et al teaches any expectation that fat substitutes can be produced from non-cross-linked physical mixtures of dietary fiber gel, water, and lipid.

For example and as already noted, Cox et al at Col. 6, lines 37-39, teaches that ingredients such as plasma, gum, and oil are combined and "[a]fter homogenization, the plasma-based mixture is treated in a manner which will cause the mixture to form a gel," i.e. cross-link. At Cols. 7-8, Cox et al explains cross-linking and its importance. At Col. 7, lines 16-32, Cox et al explain that the ingredients "may be gelled by simply providing a cross-linking promoter (heat or chemical agent)," and that the cross-linking reactions of the ingredients can be "simultaneously or separately," so as to form "new films and membranes of greater tensile strength, resiliency, texture, and integrity" that are part of the "preferred artificial adiposes [(fat substitutes)] embodying the precepts of the present invention." Clearly, nothing in Cox et al provides any expectation that fat substitutes can be non-cross-linked, physical mixtures of dietary fiber gel, water, and lipid.

35 U.S.C. § 102 Claim Rejection (Claims 1, 35, and 36).

The Applicants traverse the rejection of Claims 1, 35, and 36 as anticipated under 35 U.S.C. § 102 (b) because the Jenkins et al reference cited in the Examiner's Office Action teaches fat substitutes comprising thermally stable gelatins made by chemically reacting soluble dietary fiber and a specific hydrocolloid, typically a gum. The Applicant's invention on the other hand discloses an emulsified liquid shortening, a fat substitute, comprising an emulsified physical mixture of dietary fiber gel, water and a lipid.

There is nothing disclosed in Jenkins et al that anticipates the Applicants' invention as suggested by the Examiner. Anticipation depends upon prior publication of the invention. *35 U.S.C. § 102(b)*. The establishment of anticipation requires that every element and limitation of the claimed invention can be found in a single prior publication. *Verdegaal Bros. v. Union Oil Co. of California,* 814 F.2d 628, 631 (Fed. Cir. 1987). The Applicants traverse the rejection

because nothing in Jenkins et al teaches all the elements and limitations of the Applicants' claimed invention.

Jenkins et al teach fat substitutes that comprise chemically reacted soluble dietary fiber and gums or hydrocolloids that form thermally stable gelatins when mixed with water. Further, Jenkins et al specifically teach that rejection of insoluble dietary fiber from the composition. The applicant's invention on the other hand teaches an emulsified liquid shortening, a fat substitute, that is a physical mixture that comprises gel of insoluble dietary fiber, water, and lipid. Nothing in the cited prior art reference teaches the claimed invention, emulsified liquid shortening comprising insoluble dietary fiber gel, water, and lipid.

For example, Jenkins et al at Col. 1, line 66 to Col. 2, line 2 teach "blending soluble dietary fiber . . . with a hydrocolloid" that are "capable of forming" (by reacting) "a thermo-irreversible gel," i.e., heat stable gelatin. In Col. 2-3, Jenkins et al explain that the soluble dietary fiber is produce from fiber containing agricultural products that undergo enzymatic hydrolysis. It is important to note that Jenkins et al at Col. 3, lines 22-27, teach that "[a]fter the enzyme has been inactivated, the soluble fraction comprising the soluble dietary fiber . . . is separated from the insoluble residue," which would include any insoluble dietary fiber. Further, at Col. 3, lines 30-32, Jenkins et al point out that "[u]nder these condition of separation, the levels of lipids . . . in the [soluble] dietary fiber products are significantly reduced." Thus, Jenkins et al implicitly teach the removal of insoluble dietary fiber and lipids from fat substitutes. Finally, at Col. 4, lines 1-10, Jenkins et al teach "water soluble dietary fiber . . . and . . . hydrocolloid . . . [or] gum" are blended together in water and then cooled overnight so that "the gel is set." One skilled in the art would know that setting of the gel would imply a chemical reaction of the soluble dietary fiber and the hydrocolloid. Clearly, Jenkins et al teach fat substitutes that comprise thermally stable gelatins formed by chemically reacting soluble dietary fiber and gum to make essentially a single compound and not an emulsified physical mixture of insoluble dietary fiber gel, water, and lipid.

Claim Objection.

Claims 5-13 and 37 were objected to as being dependent from rejected claims. Applicant believes the foregoing arguments that traverse the rejections of the independent claims from which Claims 5-13 and 37 depend obviate the objections.

Applicant has amended the specification to clarify the foregoing distinctions. Although the specification has been amended so as to more reasonably convey the invention, and more specifically dietary fiber gel to one skilled in the art, the amendments to the specification are expressly, implicitly, or inherently supported by the Inglett patent, a part of the original as-filed application. In view of the amendment to the specification, and above arguments, Applicant respectfully requests that the rejection of Claims 1, 35, and 36 as being anticipated by Young et al under 35 U.S.C. § 102 (b) be withdrawn; that the rejection of Claims 1-4, and 27-36 as being obvious in view of Young et al under 35 U.S.C. § 103(a) be withdrawn; that the rejection of Claims 1-4 as being anticipated by Cox et al under 35 U.S.C. § 102 (b) be withdrawn; that the rejection of Claims 1-4, 35, and 36 as being obvious in view of Cox et al under 35 U.S.C. § 103(a) be withdrawn; and that the rejection of Claims 1, 35, and 36 as being anticipated by Jenkins et al under 35 U.S.C. § 103(b) be withdrawn.

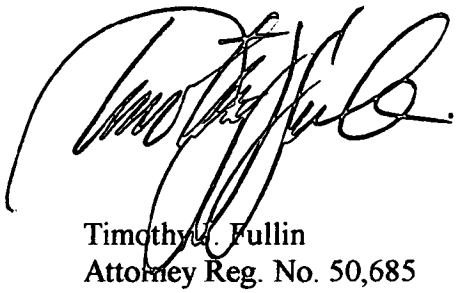
The fat substitutes as in the cited references, Young et al, Cox et al, and Jenkins et al, are functionally different from the Applicant's invention. In the cited reference, fat substitution is through the use of a gelled aqueous phase or gelatin that is formed through the use of a soluble fiber as a gelling agent or soluble fiber that is reacted with another compound such as gum or protein so as to impart additional desired characteristic to the gelatin such as structural integrity, thermal stability, and so forth. In the Applicant's invention, there is no aqueous phase gelatin because the fat substitute is a physical dispersion of ingredients that includes insoluble dietary fiber. Applicant's use of an insoluble fiber derived fat substitute is not taught in the mentioned references.

Further, the cited fat substitutes of Young et al, Cox et al, and Jenkins et al comprise compounds that are different from the Applicant's invention, such that the Applicant's fat substitute is a compound that differs from the cited fat substitutes. In Young et al, Cox et al, and Jenkins et al, the fat substitute does not comprise insoluble dietary fiber. However, the Applicant's fat substitute comprises an insoluble dietary fiber such that the Applicant's fat substitute is a different compound than taught in the cited reference. Because the Applicant's fat substitute is a different compound than known shortenings or fat substitutes, the formulation of emulsified liquid shortening, and the resulting solids content can differ from known fat

substitutes depending on the desired taste, flavor, and texture such that the use of any known formulation would be unobvious.

Applicant believes that the amended patent application is now in condition for allowance. Accordingly, the Applicant respectfully requests that a Notice of Allowance be issued in this case. The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes this would advance the prosecution of the matter.

Respectfully submitted,



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